

DRAWINGS ATTACHED



Date of filing Complete Specification Aug. 30, 1957.

Application Date Nov. 9, 1956.

No. 34411/56.

Complete Specification Published Feb. 10, 1960.

Index at acceptance:—Classes 20(4), D5; 87(1), D4(C3C: C4A: C4B: F1A: G2); and 140, A2(C: H: N3: X), A5(A: F: G2: G4: G10), A14.

International Classification: —B29d. E04c, f.

COMPLETE SPECIFICATION

PATENTS ACT, 1949

SPECIFICATION NO. 827,547

In accordance with the Decision of the Superintending Examiner, acting for the Comptroller-General, dated the ninth day of August, 1960, this Specification has been amended under Section 29 in the following manner:-

Page 3, delete lines 25 to 34 inclusive.

Page 3, line 35, for "10." read "9."

1. Attention is also directed to the following Printer's Error:-

Page 2, line 13, after "embodiment" for "on" read "of"

1: Page 3, line 77, for "Ruberold" read "Ruberoid"

Page 4, line 51, for "expoxide" read "epoxide"

20 THE PATENT OFFICE,
28th February, 1961

DS 87484/1(5)/R.153 200 2/61 PL

and labour thus making them expensive. In some cases the blocks are mounted on backing and then applied to the top surface of the laid mixture and bedded on to it so as to be supported thereby.

25 material to form panels and are laid in adjoining panels. Where the floors are laid on a concrete floor bed the concrete surface is often uneven and not level so that a top surface of a cement layer which can be up to 3" thick, 30 has to be laid on the concrete and allowed to set before fixing the blocks to form a smooth level floor, thus increasing the cost of the floors.

The panels can be preformed with abutting blocks of wood or cork providing a continuous flat underface secured by adhesive to a sheet of flexible material previously impregnated with a damp proofing material containing rubber, plastic or bituminous compounds or a mixture of two or all these materials. The backing material for the panels may be roofing felt such for example as that marketed under

It is a main object of the present invention to provide an improved method of constructing and laying such floors, which obviates the necessity for a cement layer on the floor bed and which results in a level damp-proof floor which is simpler, quicker and cheaper to lay than the conventional block floorings. the Registered Trade Mark Ruberoid. The abutting faces of the blocks may be interlocked by tongued and grooved or rabbeted connections as hereinafter fully described, providing always that a continuous flat underface is afforded when the blocks are assembled for attachment to the backing material.

According to the present invention a method of laying block floors comprising abutting blocks, is characterised by applying directly in the surface of the floor-bed without sub-

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International Classification:—B29d. E04c, f.

COMPLETE SPECIFICATION

Improvements in or relating to Flooring Materials and methods of Laying the same

I, FREDERICK WILLIAM VIGERS, a British Subject, of Broadway Chambers, Ludgate Broadway, London, E.C.4, England, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to improvements in laying flooring blocks of wood, cork or other material such as synthetic plastics.

Such flooring in conventional use consists of blocks, which may or may not be joined by interengaging tongues and grooves which are laid on a floor-bed, such as a concrete platform or floor boards, and secured to the floor-bed by nailing and/or glueing. Such floors are not waterproof and frequently require a damp course to be laid beneath them or a water-impervious adhesive may be employed. Such floors are put down by laying the blocks individually and take much time and labour thus making them expensive. In some cases the blocks are mounted on backing material to form panels and are laid in adjoining panels. Where the floors are laid on a concrete floor bed the concrete surface is often uneven and not level so that a top surface of a cement layer which can be up to 3" thick, has to be laid on the concrete and allowed to set before fixing the blocks to form a smooth level floor, thus increasing the cost of the floors.

It is a main object of the present invention to provide an improved method of constructing and laying such floors, which obviates the necessity for a cement layer on the floor bed and which results in a level damp-proof floor which is simpler, quicker and cheaper to lay than the conventional block floorings.

According to the present invention a method of laying block floors comprising abutting blocks, is characterised by applying directly

on to a floor bed a damp proof trowelable layer of a bituminous emulsion which contains a filler such as sand, cement and water, capable of supporting a preformed panel consisting of abutting floor blocks affording a continuous underface which is adhesively secured on a flexible backing material and, before the layer has set, bedding on said layer the preformed panel, the layer setting and adhering both to the floor bed and to the preformed panel.

Preferably a layer of bitumen emulsion with a filler is applied as a coating to the concrete or other substantially rigid floor bed on which the panels are laid and bedded in. The emulsion layer is preferably about $\frac{1}{8}$ " thick. In one particular method the bituminous emulsion layer consists of a mixture of bitumen, water, sand and cement and is applied by troweling to the floor-bed and the panels with or without a coating of bitumen emulsion and filler are then applied to the top surface of the laid mixture and bedded on to it so as to be supported thereby.

The panels can be preformed with abutting blocks of wood or cork providing a continuous flat underface secured by adhesive to a sheet of flexible material previously impregnated with a damp proofing material containing rubber, plastic or bituminous compounds or a mixture of two or all these materials. The backing material for the panels may be roofing felt such for example as that marketed under the Registered Trade Mark Ruberoid. The abutting faces of the blocks may be interlocked by tongued and grooved or rabbeted connections as hereinafter fully described, providing always that a continuous flat underface is afforded when the blocks are assembled for attachment to the backing material.

The backing-sheet should be of sufficient flexibility to accommodate minor irregularities in the surface of the floor-bed without sub-

stantial distortion of the flat upper surface of the blocks whilst also it needs to be capable of preventing damp rising through the floor-bed into the blocks, as is especially liable to occur with newly laid concrete floor-beds.

Where the backing sheet is of a bituminous nature, the depth of emulsion layer on the floor-bed may be reduced, compared with the thickness of cement layer at present conventionally used, without danger of cracking occurring when the floor is laid and in use.

In order that the invention may be more clearly understood a preferred embodiment on flooring laid in accordance therewith will now be described, by way of example, with reference to the diagrammatic drawings accompanying the provisional specification, in which:—

Figure 1 is a plan view of part of a laid floor, showing a corner;

Figure 2 is a cross-sectional view along the line II—II of Figure 1; and

Figure 3 is a cross-section showing two forms of tongue and recess connections between abutting blocks arranged on a backing sheet.

In the drawings like references indicate the same or similar parts.

Referring to the drawings the flooring is shown as formed of panels having a layer of abutting blocks 1 of, for example, wood, or cork providing a continuous flat underface secured by an adhesive layer 2 on the upper surface of a flexible backing sheet 3, impregnated with a rubber, plastic or bituminous material or compound.

The abutting faces of the block 1 may be as shown interlocked by tongued and grooved or rabbeted connections. As shown on the right hand side of Figure 3 the blocks 1 are interconnected at their ends and/or sides by tongues and grooves in their abutting faces; the tongues 7 are mid-height of the blocks, and the grooves 8 are then similarly formed. Alternatively as shown on the left hand side of Fig. 3 some of the blocks may be formed with a rabbeted lower edge 9 providing an undercut recess and the abutting blocks have tongues at the lower edge which tongues fit into the recess; the underface of the blocks is therefore continuous and is secured to the backing sheet.

Suitable adhesives for connecting the blocks to the backing include bitumen, phenolic or epoxide adhesives, depending on the nature of the material of the backing sheet and the blocks.

Although in the drawings the blocks in the panels are shown as being arranged in a generally square pattern, clearly they may be arranged in other patterns commonly employed in block floors, for example single herringbone or double herringbone configurations. The panels when laid side by side on the floor-bed may be interlocked by tongues and grooves.

In laying the floors on a floor-bed 6, already *in situ*, a layer 5 of bituminous emulsion with a filler, in a trowelable consistency, e.g. a mobile gel, is applied to the floor-bed. Before the bituminous emulsion layer has set the panels of suitable area, e.g. square yard, are laid on the bituminous emulsion layer and smoothed over to ensure that the upper surface of the resultant floor is substantially flat, the panels being supported by the bituminous layer on the floor-bed.

In some cases the bituminous layer which is preferably about $\frac{1}{8}$ " thick may be applied to the surface of the floor-bed such as of concrete or it may be applied direct to an upper cement layer forming the upper surface of the floor-bed.

The blocks may be of any suitable material such as wood, or cork and the backing sheet may conveniently be of roofing felt for example that known in the trade as under the Registered Trade Mark Ruberoid roofing. The backing sheet is preferably damp proof and may be a bitumen impregnated fibrous sheet material. The tongues if desired may be formed of separate slats, while the blocks have only grooves into which the slats are fitted. The joints between tongues and grooves may be secured by an elastic adhesive if desired.

By the method of applying flooring material to the floor-bed according to the invention a very much thinner smooth cement layer or no cement layer at all is necessary over the floor-bed, thus greatly reducing the cost of the floors thus laid.

Moreover a block floor is provided which not only provides its own damp course but also may be laid without need of fitting the blocks in position separately on the floor-bed and without the need of having to sand or polish the blocks *in situ* after laying, both of which are advantageous when only unskilled labour is available for laying the floor.

WHAT I CLAIM IS:—

1. A method of laying block floors comprising abutting blocks, characterised by applying directly on to a floor bed a damp proof trowelable layer of a bituminous emulsion which contains a filler such as sand, cement and water, capable of supporting a preformed panel consisting of abutting floor blocks affording a continuous underface which is adhesively secured on a flexible backing material, and, before the layer has set, bedding on to said layer, the preformed panel, the layer setting and adhering both to the floor bed and to the preformed panel.

2. A method according to Claim 1, wherein the bituminous emulsion layer is laid onto the floor bed to a depth of about $\frac{1}{8}$ ".

3. A method according to Claim 1 or 2, wherein the bituminous emulsion layer consists of a mixture of sand, cement, bitumen and water to form a bituminous emulsion

which sets to adhere firmly to the floor-bed and to the panels bedded thereon.

4. A method according to any one of Claims 1 to 3, wherein the panels are formed with abutting blocks of wood or cork secured by adhesive to a sheet of flexible material previously impregnated with a damp proofing material containing rubber, plastic or bituminous compounds, or a mixture of two or all these materials.

5. A method according to Claim 4, wherein the adhesive by which the blocks are secured to the backing sheet is a bituminous emulsion.

6. A method according to Claim 4 or 5 wherein the backing material of the panels is roofing felt.

7. A method according to any one of Claims 1 to 6 wherein the bituminous emulsion layer is applied in the consistency of a mobile gel.

8. A flooring made of preformed panels consisting of floor blocks secured to a flexible

backing material laid on a floor bed by the method according to any one of Claims 1 to 7.

9. A panel for use in the method of laying a floor according to any one of Claims 1 to 7, said panel consisting of a number of abutting floor blocks providing a continuous flat underface secured by an adhesive to a sheet of flexible felt material previously impregnated with a damp proofing material containing rubber, plastic or bituminous compounds or a mixture of two or all these materials, as herein described.

10. A method of laying wood block floors on a concrete or other substantially rigid floor bed substantially as herein described.

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PROVISIONAL SPECIFICATION

Improvements in or relating to Flooring Materials and methods of Laying the same

I, FREDERICK WILLIAM VIGERS, a British Subject, of Broadway Chambers, Ludgate Broadway, London, E.C.4, England, do hereby declare this invention to be described in the following statement:—

This invention relates to flooring of blocks of wood, cork or other material such as synthetic plastics, known as parquet flooring and to methods of laying such flooring.

Parquet flooring consists of blocks, which may or may not be joined by interengaging tongues and grooves, which are laid on a floor-bed, such as a concrete platform or floor boards, and secured to the floor-bed by nailing and/or glueing. Such floors are not water-proof and frequently require a damp course to be laid beneath them or a water-impervious adhesive may be employed. Such floors are put down by laying the blocks individually and take much time and labour thus making them expensive, also the floor-bed usually has a top surface of a cement screed thus increasing the cost of the floors.

It is a main object of the present invention to provide an improved form of parquet floor which is protected against moisture rising through the floor-bed whilst also being simpler, quicker and cheaper to lay than the conventional construction.

According to the present invention a method of laying parquet flooring comprises applying a layer of bituminous emulsion with a filler on a floor-bed, and laying thereon panels of flooring material formed of a number of juxtapositioned parquet blocks mounted on a flexible backing sheet impregnated with bituminous material. The backing sheet is preferably a roofing felt of the kind known in the

trade under the Registered Trade Mark Ruberold.

Preferably a screed of bitumen emulsion with a filler is applied as a coating to the concrete or other substantially solid floor-bed on which the backing sheet with the blocks mounted thereon is laid and bedded in. The screed is preferably about $\frac{1}{8}$ " thick. In one particular method a layer consisting of a mixture of bitumen, water, sand and cement is applied to the floor-bed and the flooring material with or without a coating of bitumen emulsion and filler is then applied to the top surface of the laid mixture and bedded into it.

The present invention also provides a flooring material for use in this process such material comprising a layer of juxtapositioned parquet blocks mounted on a flexible backing sheet which has been impregnated with a bituminous compound to render it water impervious.

In a preferred construction the blocks are each provided at one end and/or one side with a groove and on the other end and/or side respectively with a tongue, the tongues and grooves being of substantially the same depths so that the blocks are interconnected at their ends and/or sides respectively on the backing sheet. The grooves may be formed by rabbeted lower portions of the edges of the blocks and tongues in the block ends and are bounded on their under sides by the upper surface of the backing sheet, the tongues on the block ends being formed by rabbeted upper edges of the blocks. Such tongue and groove connections may be provided only on the free edges of the blocks at the panel edges, or they may be

provided also between the blocks in the panel, such panel edge tongue and groove connections ensuring that the panels when laid are automatically interlocking.

- 5 The backing-sheet should be of sufficient flexibility to accommodate minor irregularities in the surface of the floor-bed without substantial distortion of the flat upper surface of the parquet block layer whilst also it needs
10 to be capable of preventing damp rising through the floor-bed into the blocks, as is especially liable to occur with newly laid concrete floor-beds.

- 15 Where the backing sheet is of a bituminous nature, the depth of screed on the floor-bed may be reduced, compared with the type of cement screed at present used, without danger of cracking occurring when the floor is laid and in use.

- 20 In order that the invention may be more clearly understood a preferred embodiment of flooring laid in accordance therewith will now be described, by way of example, with reference to the accompanying diagrammatic
25 drawings, in which:—

Figure 1 is a plan view of part of a parquet floor, showing a corner;

Figure 2 is a cross-sectional view along the line II—II of Figure 1; and

- 30 Figure 3 is a cross-section along a section of flooring material drawn to a larger scale.

In drawings like reference numerals indicate the same or similar parts.

- 35 Referring to the drawings the flooring material comprises panels formed of a layer of parquet blocks 1 of, for example, wood, synthetic plastic or cork secured by means of an adhesive layer 2 to the upper side of a
40 backing sheet 3.

- 40 The blocks 1, as shown in Figure 3, may be interconnected at their ends and/or sides by tongues and grooves; the tongues 7 may be mid-height of the blocks, and the grooves 8 are then similarly formed. Alternatively the
45 grooves may be formed by a rabbeted lower edge 9 in the blocks, and bounded on their lower sides by the upper surface of the backing sheet 3; in this case the tongues are formed by rabbeting the upper edges of the blocks.

- 50 Suitable adhesives include bitumen, phenolic or expoxide adhesives, depending on the nature of the material of the backing sheet and the blocks.

Although in the drawings the parquet blocks

in the panels are shown as being arranged in a generally square pattern, clearly they may be arranged in other patterns commonly employed in parquet floors, for example single herringbone or double herringbone configurations. The panels of blocks mounted on the backing
60 when laid side by side on the floor-bed may be interlocked by tongues and grooves.

In laying the flooring material on a floor-bed 6, already *in situ*, a layer 5 of bituminous emulsion with a filler, in the consistency of butter, i.e. a mobile gel, is applied to the floor-bed. Before the bituminous layer has set the flooring material in panels of suitable area, e.g. a square yard, is laid on the bituminous layer and smoothed over to ensure it is substantially flat.

In some cases the bituminous layer which may be about $\frac{3}{8}$ " thick may be applied to the surface of the floor-bed or it may be applied to an upper cement screed on the floor-bed.

The blocks may be of any suitable material such as wood, thick linoleum, synthetic plastic or cork and the backing sheet may conveniently be of roofing felt for example that known in the trade under the Registered Trade Mark Ruberoid. The backing sheet must however be water-impervious and may be a bitumen impregnated fibrous sheet material. The
80 tongues if desired may be formed of separate slats, while the blocks have only grooves into which the slats are fitted. The joints between tongues and grooves may be secured by an elastic adhesive if desired.

By means of the present invention there is provided a parquet floor which not only provides its own damp course but also may be laid without need of fitting the blocks in position separately on the floor-bed and without the need of having to sand or polish the blocks *in situ* after laying, both of which are
95 advantageous when only unskilled labour is available for laying the floor. Further by the method of applying flooring material to the floor-bed according to the invention a very much thinner cement screed or no cement screed at all is necessary over the floor-bed, thus greatly reducing the cost of the floors thus laid.

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827,547
1 SHEET

PROVISIONAL SPECIFICATION

This drawing is a reproduction of
the Original on a reduced scale.

FIG. 1.

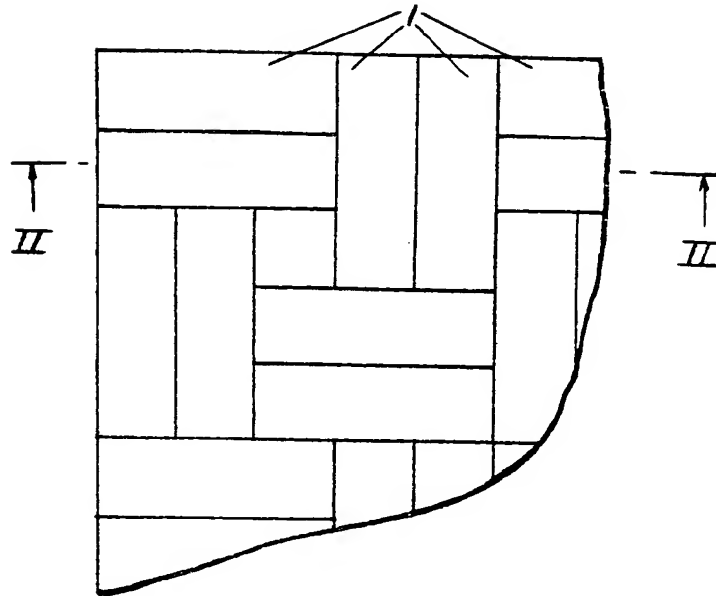


FIG. 2.

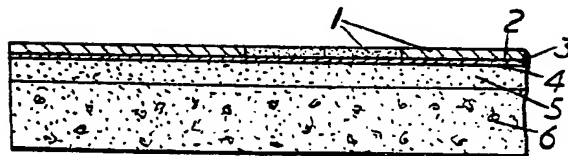


FIG. 3.

